

PCT/FI 2003/000735

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: C07K 16/42, A61K 38/00, C07K 7/00, A61P 37/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: C07K, A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, WPI, MEDLINE, EMBASE, CAPLUS, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9835981 A1 (UNIVERSITY OF CALIFORNIA AT LOS ANGELES), 20 August 1998 (20.08.1998), Tabel I, Claims 1-16 --	2-8,10-15
X	Cell Biology and Toxicology, Volume 16, 2000, C.D. Anuradha et al, "RGD peptide-induced apoptosis in human leukemia HL-60 cells requires caspase-3 activation", pages 275-283, page 276 --	2-8,10-15
P,X	WO 03007978 A1 (ALBANY MEDICAL COLLEGE), 30 January 2003 (30.01.2003), claims 1-22 --	2-8,10-15

☒ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

28 January 2004

Date of mailing of the international search report

02-02-2004

Name and mailing address of the ISA/

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	The Journal of Immunology, Volume 166, 2001, Lisa H. Butterfield et al, "T Cell Responses to HLA-A *0201-Restricted Peptides Derived from Human alpha Fetoprotein", pages 5300-5308, Table I  --	2-8,10-15
A	WO 9810787 A2 (PRENDERGAST, PATRICK T.), 19 March 1998 (19.03.1998), claims 1-126  --	2-8,10-15
A	WO 0115709 A1 (ATLANTIC BIOPHARMACEUTICALS, INC.), 8 March 2001 (08.03.2001), claim 1  --	2-8,10-15
A	EP 0353814 A2 (SCLAVO S.P.A.), 7 February 1990 (07.02.1990), claims 1-20  --	2-8,10-15
A	WO 9622787 A1 (MURGITA, ROBERT A.), 1 August 1996 (01.08.1996), claims 1-110  -- -----	2-8,10-15

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: **10-14**  
because they relate to subject matter not required to be searched by this Authority, namely:  
**see extra sheet**
2. ☒ Claims Nos.: **1, 16**  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
**see extra sheet**
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

**see extra sheet**

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
**5-6, 8 and part of claims 2-4, 7 and 15 (invention 1)**
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

**Box II.1**

Claims 10-14 relate to methods of treatment of the human or animal body by surgery or by therapy or diagnostic methods practiced on the human or animal body (PCT Rule 39.1(iv)). Nevertheless, a search has been executed for these claims. The search has been based on the alleged effects of the peptides.

**Box II.2**

Present claims 1 and 16 relate to a "recognition site of an anti-idiotypic antibody" defined by reference to a desirable characteristic or property, namely to bind "against an apoptotically active site" of a protein (AFP, HSA or Fab). In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the antibody by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Consequently, the search has not been carried out for claims 1 and 16.

**Box III**

The International Search Authority found two inventions in this international application, as follows:

1: Claims 5-6, 8 and part of claims 2-4, 7 and 15.  
Peptides with the general formula CCRGDVLDnXmY related to variants of human alpha-fetoprotein (AFP).

2: Claims 9 and part of claims 2-4, 7 and 9.  
Peptides with the general formula CCHGDLLEnXmY related to variants of human serum albumin.

The present application has been considered to contain two inventions which are not linked such that they form a single general inventive concept, as required by Rules 13.1, 13.2 and 13.3 PCT for the following reasons:

The prior art has been identified as: WO 98/35981 (D1).

.../...

D1 discloses methods for preventing or for treating cancer, including hepatocellular carcinoma, in a mammal where the cancer bears at least a portion of the alphafetoprotein molecule on its surface by creating an immune response in the mammal to at least part of the alphafetoprotein molecule.

The special technical feature of invention 1 that makes a contribution over this prior art (Rule 13.2 PCT) is a mutation in the polypeptide with the general formula CCRGDVLDnXmY related to variants of human alpha-fetoprotein (AFP).

In conclusion, the inventions are not linked by common or corresponding special technical features and define different inventions not linked by a single general inventive concept. The application, hence, does not meet the requirements of unity of invention as defined in Rule 13.1 and 13.2 PCT.

The ISA has carried out a search which relates to invention 1, corresponding to claims 5-6, 8 and part of claims 2-4, 7, 10-15.

WO	9835981	A1	20/08/1998	AU	6435398	A	08/09/1998
				CN	1259139	T	05/07/2000
				EP	0979239	A	16/02/2000
				JP	2001515347	T	18/09/2001
				US	2002031520	A	14/03/2002
				US	2003143237	A	31/07/2003

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WO	03007978	A1	30/01/2003	NONE			
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WO	9810787	A2	19/03/1998	AU	4132097	A	02/04/1998
				AU	6887096	A	02/04/1998
				CA	2265885	A	19/03/1998
				CN	1230195	A	29/09/1999
				EP	0929568	A	21/07/1999
				IL	128806	D	00/00/0000
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				WO	9810792	A	19/03/1998

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WO	0115709	A1	08/03/2001	AU	7104500	A	26/03/2001
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EP	0353814	A2	07/02/1990	IT	215217	Z	11/09/1990
				IT	1226551	B	24/01/1991
				IT	8821553	D,V	06/07/1988
				JP	2218694	A	31/08/1990
				US	5130415	A	14/07/1992
				US	5206164	A	27/04/1993

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WO	9622787	A1	01/08/1996	AU	700975	B	14/01/1999
				AU	4903596	A	14/08/1996
				CA	2211324	A	01/08/1996
				EP	0805687	A	12/11/1997
				JP	10513347	T	22/12/1998
				US	5965528	A	12/10/1999
				US	6288034	B	11/09/2001
				US	2002193297	A	19/12/2002
				US	6416734	B	09/07/2002
				US	6534479	B	18/03/2003
				US	6630445	B	07/10/2003
				US	2002155996	A	24/10/2002
				US	6627440	B	30/09/2003
				US	6331611	B	18/12/2001

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